

IN THE CLAIMS

Please cancel claims 14-19, 30, 50 and 55-58, amend claims 1, 20, 31, 34, 35, 41 and 46, and add new claims 60-64. This amendment is made without prejudice. (The changes in these claims from their immediate prior version are shown with ~~striketrough~~ or [[double brackets]] for deleted matter and underlines for added matter. A complete listing of the claims with proper claims identifiers follows.

1. (Currently amended) A motor comprising:
 - a) a shaft having a rotational axis;
 - b) a hub attached to the shaft and including a permanent magnet;
 - c) a bearing allowing rotation of the hub about the rotational axis of the shaft;
 - d) a stator comprising conductors;
 - e) a monolithically formed body that substantially encapsulates the stator conductors, wherein a thermoplastic material is injection molded to form the body and the body is configured to align the shaft, hub and bearing with respect to the stator; and mounting features are formed in the body to mount the motor to a device to be powered by the motor; and
 - f) an insert substantially encapsulated within the body, wherein the insert provides structural rigidity to the body.
2. (Previously presented) The motor of claim 1 wherein the body surrounds the bearing.
3. (Previously presented) The motor of claim 1 wherein the bearing comprises an upper bearing and a lower bearing.
4. (Previously presented) The motor of claim 3 wherein the body substantially surrounds the upper bearing and the lower bearing.
5. (Previously presented) The motor of claim 1 wherein the shaft is fixed relative to the body.
6. (Previously presented) The motor of claim 1 wherein the shaft is freely rotatable relative to the body.

7. (Previously presented) The motor of claim 1 wherein the mounting features are configured to allow the motor to be mounted to a hard disc drive.

8. (Cancelled)

9. (Previously presented) The motor of claim 1 wherein the permanent magnet is concentrically disposed around the stator.

10. (Previously presented) The motor of claim 1 wherein the stator concentrically surrounds the permanent magnet.

11. (Previously presented) The motor of claim 1 wherein a second magnet is substantially encapsulated within the body.

12. (Previously presented) The motor of claim 11 wherein the second magnet is an enhancement magnet.

13. (Previously presented) The motor of claim 11 wherein the second magnet is part of a magnetic bearing.

14-19. (Cancelled)

20. (Currently amended) A motor comprising:
a) a shaft;
b) a bearing surrounding the shaft;
c) windings acting as conductors; and
d) a monolithically formed body that substantially encapsulates at least a portion of the windings, wherein a thermoplastic material is injection molded to form the body, the material including aluminum oxide as a filler, the aluminum oxide comprising about 55% of the thermoplastic material.

21. (Previously presented) The motor of claim 1 wherein the bearing is fixed to the body.

22. (Previously presented) The motor of claim 1 wherein the hub comprises a disc support member and the shaft is fixed to the disc support member.

23. (Previously presented) The motor of claim 1 wherein the stator further comprises a core and the conductors induce magnetic fields in the core when current is conducted by the conductors.

24. (Previously presented) The motor of claim 23 wherein the core comprises steel laminations.

25. (Previously presented) The motor of claim 23 wherein the core has a plurality of poles and the conductors comprise windings around said poles.

26. (Previously presented) The motor of claim 1 wherein the bearing comprises ball bearings.

27. (Previously presented) The motor of claim 26 wherein the motor comprises a high speed spindle motor and the bearings comprise oversized bearings having an outer diameter of over 13 mm.

28. (Previously presented) The motor of claim 1 wherein the bearing is a hydrodynamic bearing.

29. (Previously presented) The motor of claim 1 wherein the motor is able to operate at at least 10,000 rpm.

30. (Cancelled)

31. (Currently amended) The motor of claim 1 wherein the insert also enhances heat transfer away from the bearing and the stator.

32. (Previously presented) The motor of claim 1 wherein a first portion of a magnetic bearing is substantially encapsulated within the body and a second opposing portion of the magnetic bearing is attached to the hub.

33. (Previously presented) The motor of claim 32 wherein the body has been machined to provide precise tolerance between the first and second portions of the magnetic bearing.

34. (Currently amended) The motor of claim 1 wherein the insert also enhances dampening of motor vibration.

35. (Currently amended) The motor of claim 1 wherein the insert also enhances dampening of audible noise.

36. (Previously presented) The motor of claim 1 wherein the shaft is fixed to the body and the insert is positioned between the shaft and the bearing.

37. (Previously presented) The motor of claim 1 wherein the thermoplastic material includes ceramic particles.

38. (Previously presented) The motor of claim 1 wherein the thermoplastic material has a coefficient of linear thermal expansion of less than 2×10^{-5} in/in °F throughout the range of 0-250°F.

39. (Previously presented) The motor of claim 1 wherein the thermoplastic material has a coefficient of linear thermal expansion of less than 1.5×10^{-5} in/in °F throughout the range of 0-250°F.

40. (Previously presented) The motor of claim 1 wherein the thermoplastic material has a coefficient of linear thermal expansion of between about 0.8×10^{-5} in/in °F and about 1.2×10^{-5} in/in °F throughout the range of 0-250°F.

41. (Currently amended) The motor of claim 1 wherein the bearing comprises steel, the hub ~~comprising~~ comprises aluminum and the thermoplastic material has a coefficient of linear thermal expansion that is between the coefficient of linear thermal expansion of the steel and the coefficient of linear thermal expansion of the aluminum.

42. (Previously presented) The motor of claim 1 wherein the thermoplastic material comprises polyphenyl sulfide.

43. (Previously presented) The motor of claim 1 wherein the shaft is fixed to the thermoplastic body by being molded with the stator in the thermoplastic body.

44. (Previously presented) The motor of claim 1 wherein the bearing is fixed to the thermoplastic body with a press fit.

45. (Previously presented) A high speed spindle motor for a disc drive comprising:

- a) a shaft having a rotational axis;
- b) a disc support member attached to the shaft and including a permanent magnet;
- c) a bearing allowing rotation of the disc support member about the rotational axis of the shaft;
- d) a stator; and
- e) a monolithically formed body that substantially encapsulates the stator, wherein a thermoplastic material is injection molded to form the body and the body is configured to align the shaft, disc support member and bearing with respect to the stator; and wherein the shaft is fixed to the body and an insert is substantially encapsulated within the body and is positioned between the shaft and the bearing.

46. (Currently amended) The motor of claim [[8]]_1 wherein the insert is rigidly fixed to the stator by the body and is connected to the stator only through the thermoplastic material.

47. (Previously presented) The motor of claim 46 wherein the shaft is fixed to the insert by being substantially encapsulated by the thermoplastic material.

48. (Previously presented) The motor of claim 46 wherein the bearing is fixed to the insert by being substantially encapsulated by the thermoplastic material.

49. (Previously presented) The motor of claim 1 herein said mounting features comprise apertures.

50. (Cancelled)

51. (Previously presented) The motor of claim 20 wherein the thermoplastic material comprises polyphenyl sulfide.

52. (Previously presented) The motor of claim 20 wherein the thermoplastic material comprises nylon.

53. (Previously presented) The motor of claim 20 wherein the thermoplastic material comprises polyester.

54. (Previously presented) The motor of claim 20 wherein the thermoplastic material comprises a liquid crystal polymer.

55-58. (Cancelled)

59. (Previously presented) The motor of claim 1 wherein the shaft is attached to the insert.

60. (New) A motor comprising:

- a) a shaft having a rotational axis;
- b) a hub attached to the shaft and including a permanent magnet;
- c) a bearing allowing rotation of the hub about the rotational axis of the shaft;
- d) a stator comprising conductors;
- e) a monolithically formed body that substantially encapsulates the stator conductors, wherein a thermoplastic material is injection molded to form the body and the body is configured to align the shaft, hub and bearing with respect to the stator; and mounting features are formed in the body to mount the motor to a device to be powered by the motor; and
- f) an insert substantially encapsulated within the body wherein the insert enhances heat transfer away from the bearing and the stator.

61. (New) A motor comprising:

- a) a shaft having a rotational axis;
- b) a hub attached to the shaft and including a permanent magnet;
- c) a bearing allowing rotation of the hub about the rotational axis of the shaft;
- d) a stator comprising conductors;

e) a monolithically formed body that substantially encapsulates the stator conductors, wherein a thermoplastic material is injection molded to form the body and the body is configured to align the shaft, hub and bearing with respect to the stator; and mounting features are formed in the body to mount the motor to a device to be powered by the motor; and

f) an insert substantially encapsulated within the body wherein the insert enhances dampening of motor vibration.

62. (New) A motor comprising:

a) a shaft having a rotational axis;
b) a hub attached to the shaft and including a permanent magnet;
c) a bearing allowing rotation of the hub about the rotational axis of the shaft;
d) a stator comprising conductors;
e) a monolithically formed body that substantially encapsulates the stator conductors, wherein a thermoplastic material is injection molded to form the body and the body is configured to align the shaft, hub and bearing with respect to the stator; and mounting features are formed in the body to mount the motor to a device to be powered by the motor; and

f) an insert substantially encapsulated within the body wherein the insert enhances dampening of audible noise.

63. (New) A motor comprising:

a) a shaft having a rotational axis;
b) a hub attached to the shaft and including a permanent magnet;
c) a bearing allowing rotation of the hub about the rotational axis of the shaft;
d) a stator comprising conductors;
e) a monolithically formed body that substantially encapsulates the stator conductors, wherein a thermoplastic material is injection molded to form the body and the body is configured to align the shaft, hub and bearing with respect to the stator; and mounting features are formed in the body to mount the motor to a device to be powered by the motor; and

f) an insert substantially encapsulated within the body, wherein the shaft is fixed to the body and the insert is positioned between the shaft and the bearing.

64. (New) A motor comprising:

- a) a shaft;
- b) a bearing surrounding the shaft;
- c) windings acting as conductors; and
- d) a monolithically formed body that substantially encapsulates at least a portion of the windings, wherein a thermoplastic material comprising polyphenyl sulfide is injection molded to form the body, the material including aluminum oxide as a filler.